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Response to Question 1a: We would have to say that the ideal would be that the Federal government ensures that the complete collection of articles resulting from publicly funded research is made freely accessible to the public and that the public can fully use them without commercial restrictions. Students and scientists especially need full Open Access (immediate, free online availability coupled with rights to reuse fully), which will create the environment that will improve students' educations, maximize scientific productivity, and accelerate commercial innovation. Enabling full reuse of these articles allows innovative individuals and companies to construct new services and new products on this publicly-funded content, improving the ability for U.S. companies to compete successfully on the global stage (where we are beginning to fall behind in hard sciences research). Furthermore, providing faster access to this crucial information allows innovative individuals, entrepreneurs and businesses to incorporate ideas generated from this research into their development cycles more quickly, speeding the launch of new services and products into the marketplace. Lastly, acceleration of this kind of commercialization spurs economic growth, creating new job opportunities across broad sectors of the economy, important in the best of times, even more so in bad economic times.

Response to Q1b: Research articles are quite literally the building blocks of a student's education. Open Access allows research results to be quickly incorporated into the teaching and learning process – improving the quality of education quickly and cost-effectively. Providing American students with the most complete, up-to-date education possible boosts US economic competitiveness, especially in innovative, cutting-edge fields like biotechnology and alternative energy. Professors can only teach what they have access to. Open Access greatly improves students' ability to get a complete education. Open Access helps students get projects off the ground and build businesses around their research. Losing access to the relevant research literature is a significant barrier for students who might consider leaving the Academy to start a business around their research. Students' library cards expire at graduation, meaning that the day they graduate they lose access to the vast majority of research that is subscription-access only. This impedes students' ability to stay current in their field and hinders their ability to hit the ground running when they put their education to work in the Academy or private sector. This cost is even greater in a weak economy where students may spend a significant amount of time in their job search. Strong public access policies help level the playing field for students outside of the wealthiest institutions, who are at a distinct disadvantage when it comes to building their education from the most up-to-date research. This means they're less well prepared to contribute when it's time to put their education to use in the private or public sector. Open Access to research articles is critical a driver of scientific innovation and productivity. Open Access leads to increased citations and follow-on research. Open Access promotes diversity of follow-on research, and increases the pursuit of new research pathways. Open Access lets scientists incorporate new findings into their research faster. Opening access to research articles allows

scientists to get to – and read more – information than they previously could. It also lets scientists use new tools to incorporate more articles into their research faster. Open Access can enable machines as a new category of readers and users – opening up vast, previously unobtainable new research pathways, and making new connections possible.

Response to Q1c: Compared to benefits outlined above, the costs are very minimal. The NIH Public Access Policy costs approximately \$3.5 million per year out of a \$30+ billion budget. This is an investment of less than 1/1,000th of 1% that results in access to all NIH-funded research, which is used by more than 500,000 unique users per day through PubMed Central.

Response to Q1d: Access must be free, immediate, and coupled with the rights to reuse the articles fully in a digital environment. Restrictions that limit how we can use the scientific research we paid for limits the return to us as taxpayers. Access without reuse delivers only a fraction of the value. Broad re-use allows researchers to unlock additional value from research investment – now, and for decades. Enabling full reuse means we can do more with less; we don't have to duplicate research to be able to build on results, and we can continue to extract value from our initial investment for years to come. Courses are typically only 3 to 4 months long. Access must be immediate to provide students with the most up-to-date education possible – anything less impedes students' educations and hurts US economic competitiveness.

Response to Q2: No Comment

Response to Q3: An effective federal public access policy involving multiple research funding agencies could potentially involve multiple public access repositories. Approved repositories that meet conditions for public accessibility, use rights, interoperability, and long-term preservation of articles could be maintained by third parties, encouraging innovative public/private partnerships. All repositories must support access and use conditions that allow *all* interested parties to build on them, and to create new services, products, etc. on top of this publicly funded information. The federal government is an appropriate entity to provide permanent stewardship of these articles and is in a unique position to ensure that publicly funded articles are permanently preserved, made accessible, and useable. To ensure this, any public access policies that are developed must give the federal government adequate rights to archive and make distribute publicly funded articles.

Response to Q4: No Comment

Response to Q5: No Comment

Response to Q6: For any public access policy to be successful, there must be consistency of requirements and mandates. Currently, research universities have faculty members and researchers who hold grants from all federal funding agencies and some of them have grants from multiple agencies concurrently. To the extent practicable, uniform requirements and procedures regarding deposit of peer-reviewed literature should be established across all funding agencies covered. Uniformity of deposit requirements will reduce the complexity and cost while at the same time, increase the rate of compliance.

Response to Q7: Educational materials that result from publicly funded research should be made readily accessible to the public. Other materials, such as book chapters, texts, conference proceedings should be made accessible, although the policies under which they are made accessible may need to differ from those directed at journal articles. Different conditions apply to different types of material (i.e., authors are not paid for journals articles, but may be paid for text book chapters) and policies should reflect these differences. In no way should these policies serve to jeopardize a researcher's agreement with publishers of his/her book or the like.

Response to Q8: Students want and need access now. The U.S. should be educating our students with the best and most current information possible. It is unacceptable to ask our students to "make do" with old information. Furthermore, since courses are typically only 3 to 4 months long, an embargo necessarily means students are missing information that would provide them a more up-to-date education. Still, an embargo period where an author can determine a hard stop-date between 0-12 months has been proven effective across multiple disciplines and would be an acceptable compromise. No data has ever been provided by any publisher that I am aware of that this embargo period has harmed them or their bottom-line. An embargo of 12 months or less has been adopted by hundreds of journals.